Wilmington District

Wilmington Harbor General Reevaluation Report

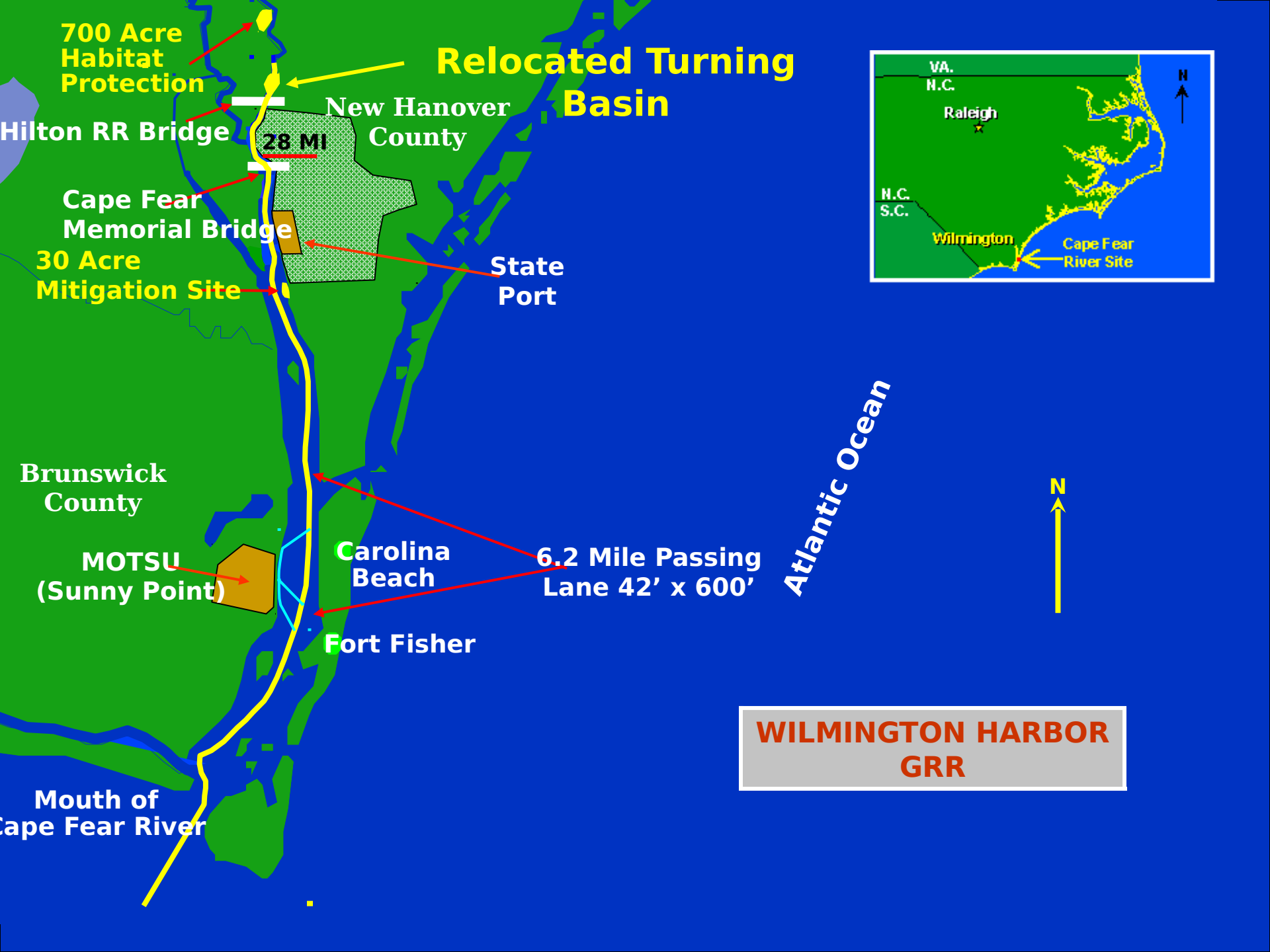
April 18, 2007

Wilmington District

General Reevaluation Report (GRR)

Wilmington Harbor GRR Components

- Relocation of a ship turning basin in the NE Cape Fear River
- Protection of Primary Nursery Area
- Fish passage at the Cape Fear River Locks and Dams


700 Acre Habitat Protection
Relocated Turning Basin
New Hanover County
Hilton RR Bridge
28 MI
Cape Fear Memorial Bridge
30 Acre Mitigation Site
State Port
VA.
N.C.
Raleigh
N
N.C.
S.C.
Wilmington
Cape Fear River Site
Brunswick County
MOTSU (Sunny Point)
Carolina Beach
6.2 Mile Passing Lane 42’ x 600’
Atlantic Ocean
N
Fort Fisher
Mouth of Cape Fear River
WILMINGTON HARBOR GRR

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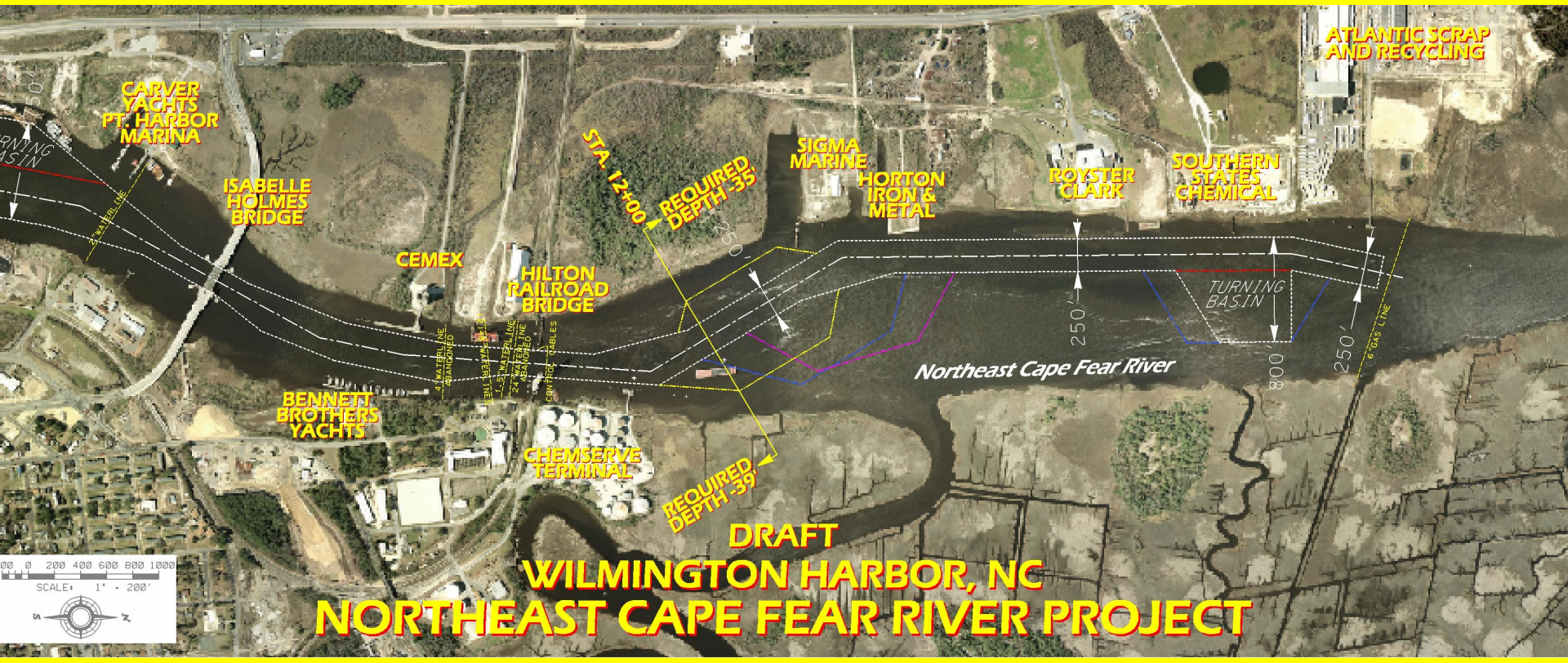
Potential Relocated Turning Basin



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Relocated Turning Basin

- Tight squeeze during daylight going bow first
- At night, backing stern first even more difficult

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Relocated Turning Basin

Mitigation Options

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Eagle Island

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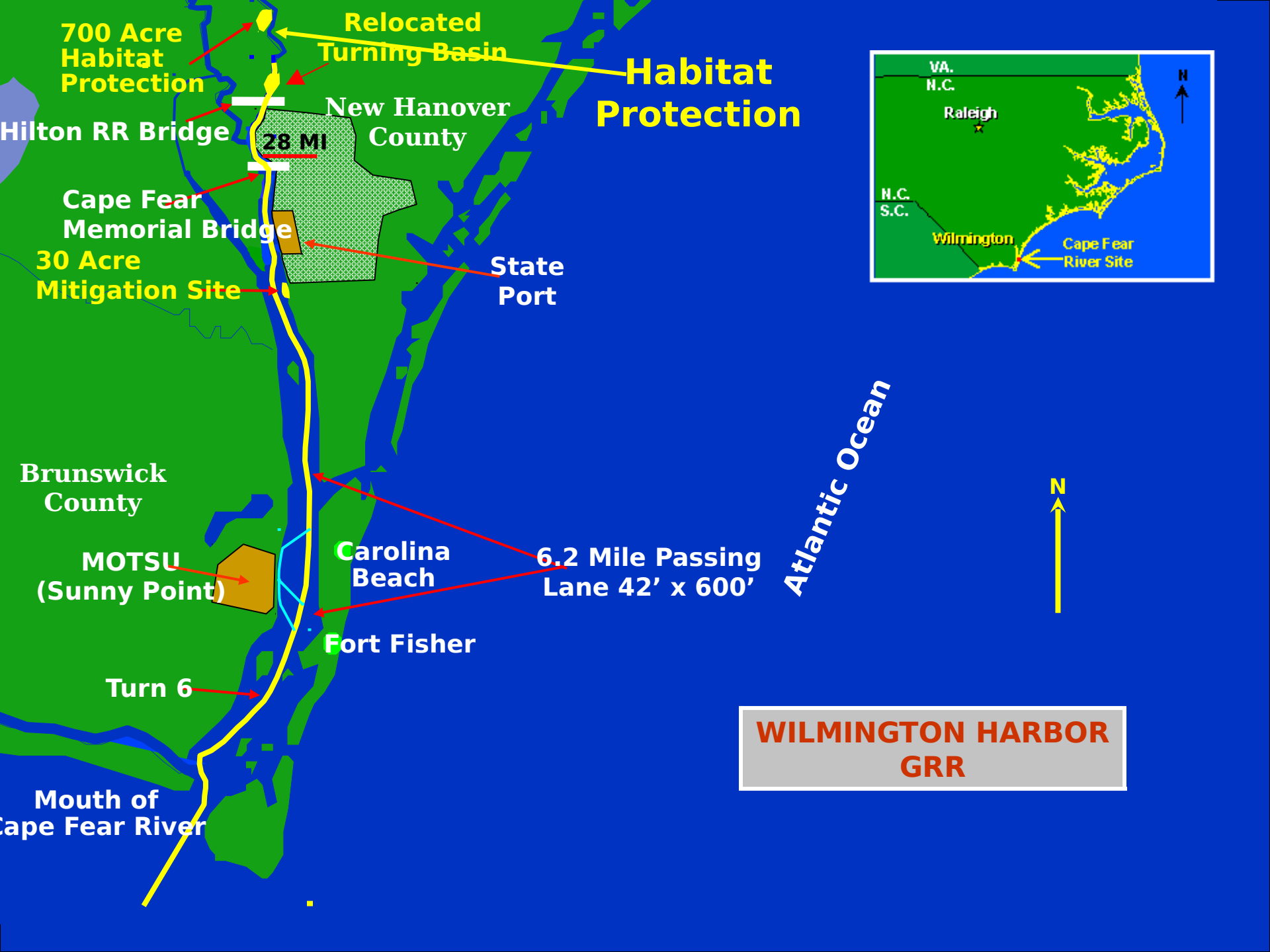
Eagle Island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Atlantic Ocean
N
Fort Fisher
Turn 6
Mouth of Cape Fear River
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Protection of Primary Nursery Areas

- 850 acres of swamp / upland with 29 acres Primary Nursery Areas
- Managed for public benefit
- Protection from siltation and pollution

700 Acre Habitat Protection
Relocated Turning Basin
New Hanover County
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Blasting
Atlantic Ocean
Brunswick County
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VA.
N.C.
Raleigh
N.C.
S.C.
Wilmington
Cape Fear River Site
N
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Rock Blasting

- NMFS Biological Opinion (BO) under the Endangered Species Act required:
  - Construct fish passage at Lock and Dam #1 for endangered shortnose sturgeon
  - Study feasibility of fish passage at other two locks and dams
- Without these conditions, blasting precluded
- 78 blasts to date, additional blasting may be required

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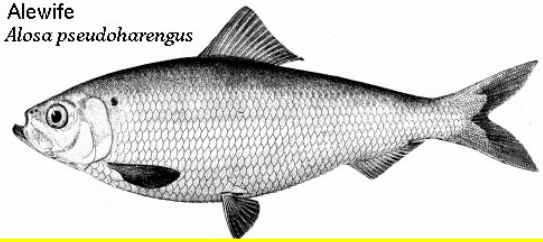
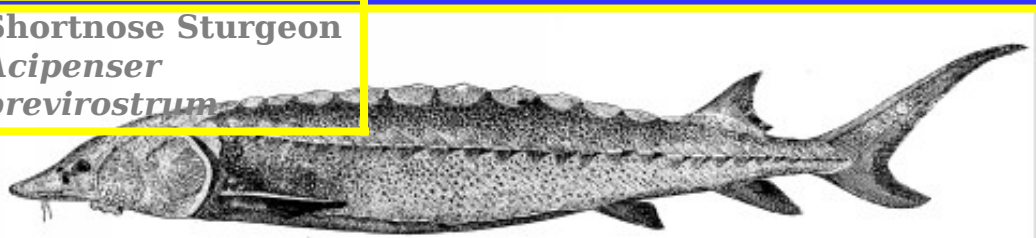
North Carolina Anadromous Fish

Alewife
Alosa pseudoharengus

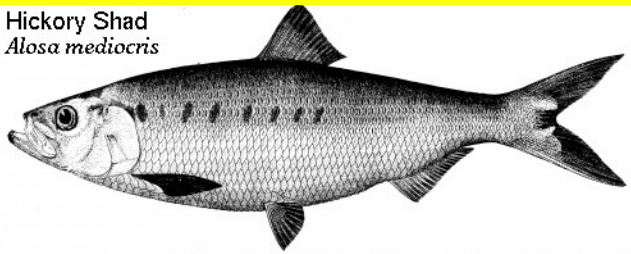


Atlantic Sturgeon
Acipenser oxyrhynchus

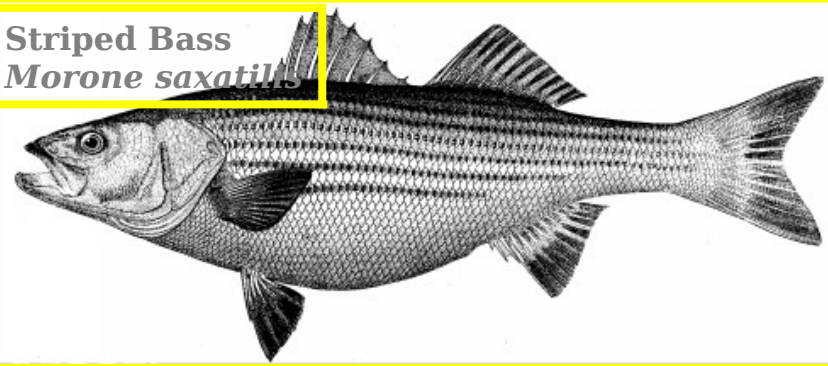
Shortnose Sturgeon
Acipenser brevirostrum



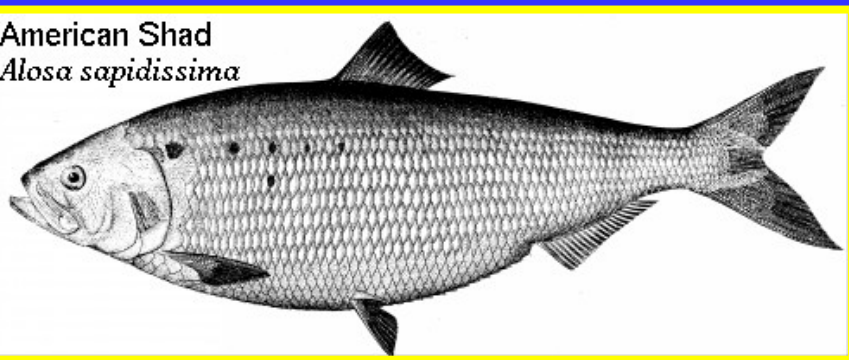
Hickory Shad
Alosa mediocris



Striped Bass
Morone saxatilis



American Shad
Alosa sapidissima



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Better Fish Passage Alternatives?

- No commercial traffic
- Operations costs about $500-$600 thousand/year
- Locks and Dams have finite life
- Better fish passage solution considering:
  - Water supply
  - Recreation
  - Commercial and recreation fishing

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Lock and Dam # 1

- **Fish passage at Lock and Dam # 1:**
  - **Deauthorization not required**
    - **Continue locking**
    - **Nature-like fish way**
    - **Diversion rock ramp**
    - **Rock ramp the entire downstream face of the dam**
  - **Deauthorization required**
    - **Rock ramp or step pool in lock chamber**
    - **Alter the dam**
    - **Lower the dam**
    - **Remove the dam**

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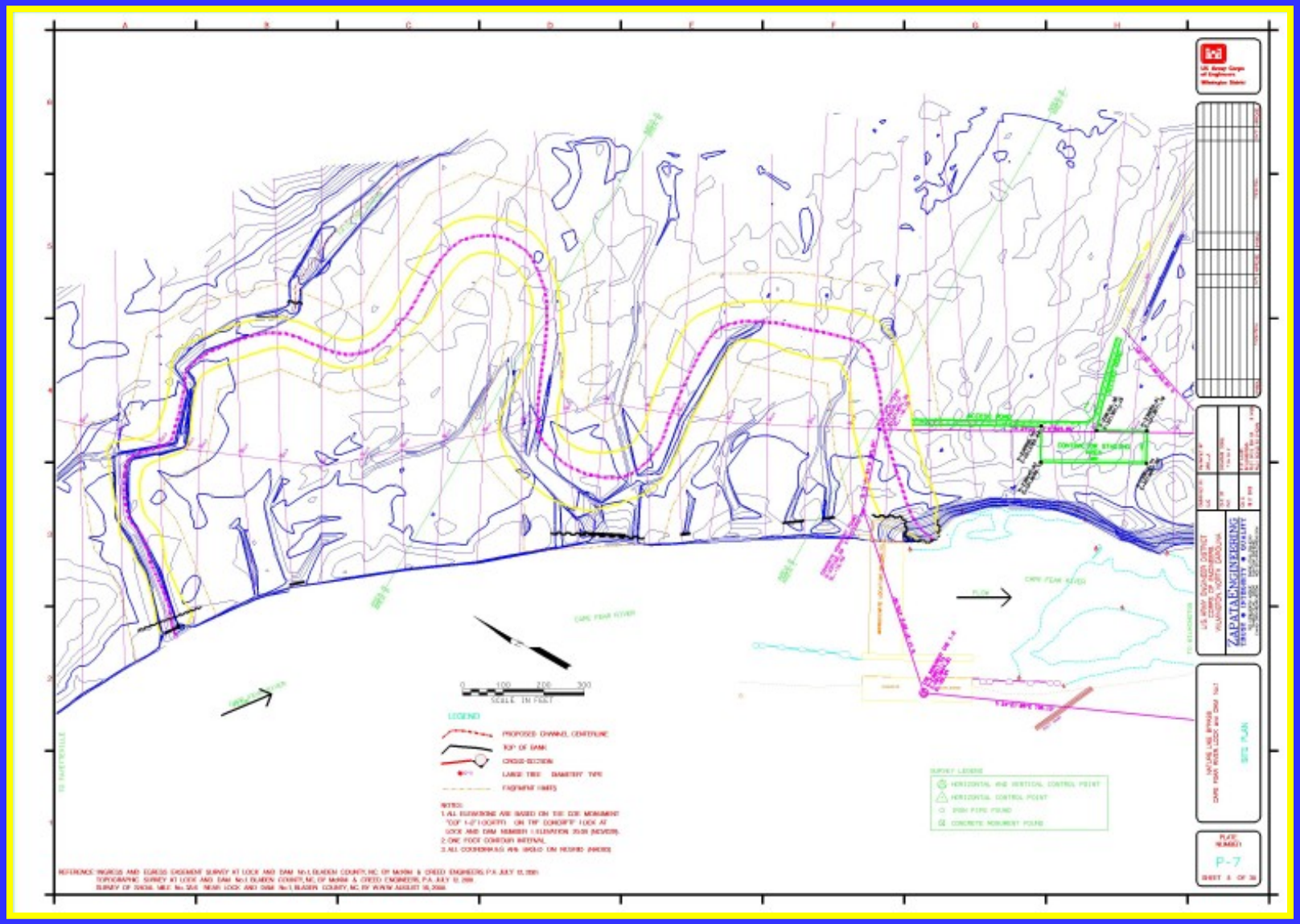
Bypass Design


LEGEND
PROPOSED CHANNEL CENTERLINE
TOP OF BANK
CROSS-SECTION
LARGE TREE DIAMETER TYPE
EASEMENT LIMITS
NOTES:
1. ALL ELEVATIONS ARE BASED ON THE USE MONUMENT "CUF 1-2" (LOCATED ON THE DOWNSTREAM LOCK AT LOCK AND DAM NUMBER 1 (ELEVATION 35.01 (NEVD88).
2. ONE FOOT CONTOUR INTERVAL.
3. ALL COORDINATES ARE BASED ON NSRS (NAD83)
SURVEY LEGEND
HORIZONTAL AND VERTICAL CONTROL POINT
HORIZONTAL CONTROL POINT
IRON PIPE FOUND
CONCRETE MONUMENT FOUND
SITE PLAN
P-7

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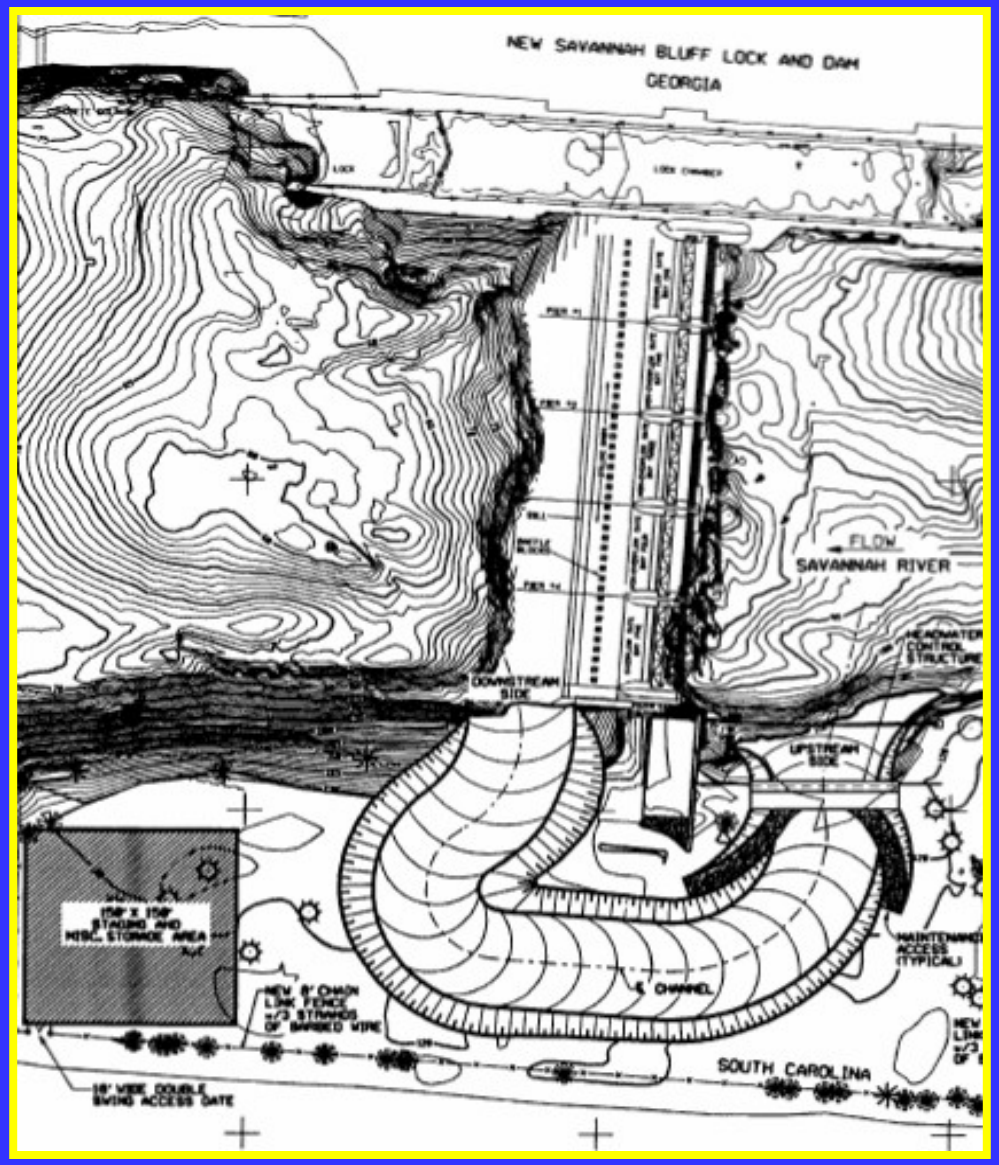
Diversion Rock Ramp



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Rock Arch Rapids
Red River, Fargo, ND

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Lock and Dam # 1

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General Reevaluation Report

- **Locks and Dams Technical Issues:**
  - Can not compromise water supply
  - Detailed coordination will all parties
  - Alternative analysis for fish passage
  - Salt water intrusion
  - Potential for commercial use of the locks
  - Recreation
  - Modeling of water level changes it dams altered of removed
  - Future ownership of the locks and dams and recreation areas

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General Reevaluation Report

- Milestones
  - Scoping meeting June 2005
  - Select alternatives May 2007
  - Alternative Formulation Briefing August 2007
  - Circulate Draft EIS Winter 2007
  - Circulate Final EIS Summer 2008
  - Record of Decision Spring 2009

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General Reevaluation Report (GRR)

http://www.saw.usace.army.mil/wilmington-harbor/GRR/GR

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QUESTIONS ?

Comments